

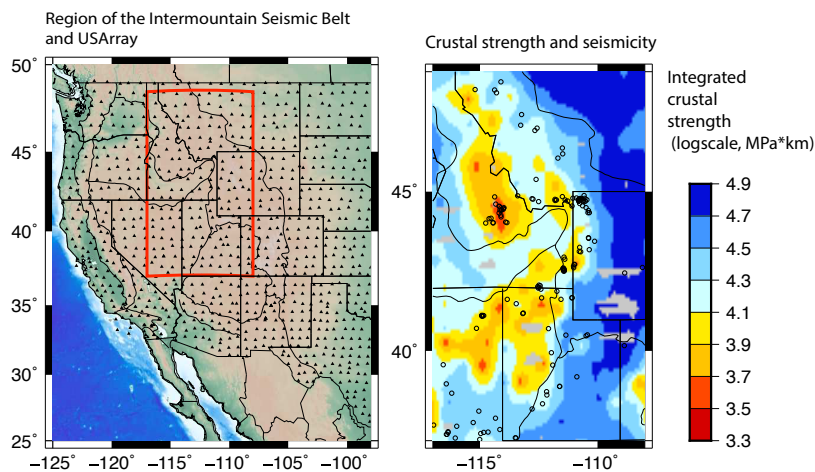


IGPP Virtual Seminar Series

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Crustal composition and strength: a revisit to the intermountain west seismic belt



Date: Tuesday, May 26, 2020

Time: 12:30 pm, Pacific Time

Host: Tianze Liu

Register to attend:

<https://ucsd.zoom.us/meeting/register/tJ0lcO-vqzktH9YHSdgV7cjRq36HyJzhapXA>

Because this meeting will be recorded, please make sure that you are comfortable with it before registering.

The Intermountain Seismic Belt (ISB), extending from Montana through Idaho, Wyoming, Utah, and into southern Nevada, represents a major intraplate seismic zone in the continental US. This seismically active boundary has been interpreted as a subplate boundary between the tectonically active W. US with the more stable cratonic core of North America. In this talk, I will revisit the seismic structure of this region and argue that the crust in the IBS is particularly weakened by its chemical composition being felsic. Particularly, I will show that by combining different seismic observations relatively accurate quantification to the chemical composition of the crust can be made, and in addition, can be further translated into the strength of the crust. Based on this approach, we draw the map of the crustal strength across the N.W. US with the USArray data and show that the crust of ISB is perhaps chemically weakened by more than 50% relative to its neighboring regions. This result, albeit caveats in assumptions, provides an alternative mechanism for intraplate seismicity in general.